

We claim:

1 1. A machine tool comprising:
2 a machine frame defining a working region and a
3 workpiece-replacement region and formed with guides defining a
4 path between said regions;
5 a tool carrier at said working region for receiving a
6 tool for machining a workpiece positioned at said working region;
7 and
8 two workpiece carriers displaceable along said guides
9 and formed as cross slides with automatically actuatable
10 workpiece holders jointly engageable in common with said
11 workpiece for automatically displacing said workpiece between
12 said regions.

1 2. The machine tool defined in claim 1 wherein said
2 tool carrier is constructed and arranged for selectively
3 receiving a tool for turning, milling, grinding, drilling, boring
4 and grinding said workpiece.

1 3. The machine tool defined in claim 1 wherein said
2 guides are rails extending longitudinally of said machine frame
3 and said regions are spaced longitudinally apart on said machine

4 frame, said cross slides each having a longitudinal slide
5 displaceable on said rails jointly with the other longitudinal
6 slide in a first direction of movement corresponding to z-axis
7 feed motion for machining of the workpiece in said working region
8 and displacement of said workpiece between said regions for
9 depositing a machined workpiece in said workpiece-replacement
10 region and receiving a workpiece to be machined in said
11 workpiece-replacement region.

1 4. The machine tool defined in claim 3 wherein each of
2 said cross slides comprises a transverse slide on the respective
3 longitudinal slide for displacing a workpiece jointly held by the
4 workpiece holders of said cross slides in a second direction of
5 an x-axis perpendicular to said first direction by simultaneous
6 movement of both said transverse slides.

1 5. The machine tool defined in claim 4 wherein said
2 machine frame has two spaced apart parallel side walls between
3 which the working region and the workpiece-replacement region are
4 located, said rails being provided on said side walls.

1 6. The machine tool defined in claim 4 wherein said
2 workpiece holders are respective chucks adapted to receive and
3 automatically clamp the respective workpiece.

1 7. The machine tool defined in claim 6 wherein at
2 least one of said chucks is provided with a rotating drive for
3 rotating the respective workpiece on the cross slides.

1 8. The machine tool defined in claim 7 wherein said
2 tool carrier includes a revolving head for a plurality of
3 machining tools.

1 9. The machine tool defined in claim 7 wherein said
2 tool carrier includes at least one motor-driven spindle for at
3 least one tool for machining the respective workpiece.

1 10. The machine tool defined in claim 9 wherein said
2 spindle is displaceable on said machine frame in a direction
3 perpendicular to a direction of displacement of a workpiece by
4 said cross slides.

1 11. The machine tool defined in claim 9 wherein said
2 spindle is displaceable in a direction perpendicular to a
3 rotation axis of said spindle.

1 12. The machine tool defined in claim 9, further
2 comprising a workpiece changer at said workpiece-replacement
3 region for exchanging a machined workpiece held by said cross
4 slides for a workpiece requiring machining.

5 13. The machine tool defined in claim 4 wherein each
6 of said longitudinal slides has an intermediate part and lateral
7 parts flanking the intermediate part and riding on said rails,
8 the lateral parts being of different lengths.

1 14. The machine tool defined in claim 13 wherein said
2 longitudinal slides are of identical configuration and are offset
3 in a plan view through 180° with respect to one another.

1 15. The machine tool defined in claim 13, further
2 comprising vertical rails on each longitudinal slide for vertical
3 displacement of the respective transverse slide.